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EXAMINER
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PIERRE, MYRIAM

ART UNIT	PAPER NUMBER
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2654

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8

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/585,298

Applicant(s)

HUANG ET AL.

Examiner

Myriam Pierre

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☒ Claim(s) 22 and 43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 22 and 43 are objected to because of the following informalities: for lacking antecedent basis for "building an N-gram language model". The examiner interprets the claims as having the wrong dependency, as claims 22 and 43 should depend on claims 20 and 41, respectively.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meteer et al (ICASSP 93) in view of Masataki (0-8186-7919-0/97IEEE 1997).

**As to claim 1**, Meteer teaches a method comprising of obtaining a plurality of context-free grammars comprising non-terminal tokens representing semantic or syntactic concepts (More than three context-free grammars are needed for a variety of possible combination of grammars. Meteer uses Context-free-grammar, which, by definition, has a left side of non-terminals that has abstract symbols and a right side that has one or more non-terminal or terminal symbols, For example page II-38, left column paragraph 3), replacing each of the identified word occurrences with corresponding non-terminal tokens (**Phrases modeled with phrase structure grammar are replaced with non-terminals, page II-39, left column paragraph 1; one way to identify word occurrences is to figure the probability of expanding non-terminals, page II-38, left column paragraph 2**); building an N-gram model having the non-terminal tokens (**Meteer uses grammar that is replaced with single non-terminals, tokens are generally used represent non-reduced text element in data to be parsed, which is common in non-terminals, page II-39, left column paragraph 2**); and obtaining a second plurality of context-free grammars comprising at least some of the same non-terminals representing the same semantic or syntactic concepts, each of the context-free grammars of the second plurality being more appropriate for

use in the selected application (**Meteer uses subset of rules, such as sub-grammar, and other rules that are not listed subset implies that are other rule besides these. In the example, the rules uses one plurality of grammar rules and uses another plurality of grammar rules for the various ways the words are spoken to mean the same thing, page II-38, left column paragraph 3).**

Meteer does parsing the corpus with the plurality of context-free grammars to identify word occurrences of each of the semantic or syntactic concepts (**Meteer phrase**

**grammar is used to parse training text, a task dependent text, Fig 1 and page II-37, right column paragraph 2; and phrase grammar in context free form and some context dependence in probabilities of expanding non-terminals page II-38, left column paragraph 4);**

obtaining a plurality of context-free grammars comprising each of the context-free grammars having words present in the task independent corpus to form the semantic or syntactic concepts; (**Meteer uses context-free grammars having words present in a task dependent corpus to form semantic structure. II-37, left column paragraph 1)**

but does not teach of using a task independent corpus for this.

However, Masataki teaches of using a Task-Independent task (text or corpus) Model that is defined as "N-grams trained using all data of a training set" and Task-Dependent (text or corpus) Model which is defined as "N-grams trained using the data

of a target task only" (**page 785, right column**), and uses a task independent corpus to build a task dependent corpus (**Fig. 1 page 783**).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Masataki's task independent corpus and Meteer's parsing the corpus and obtaining a plurality of context-free grammars from a task dependent corpus for the purpose of building a language model that is unified. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

**As to claims 2 and 23**, Meteer teaches a method comprising of storing the N-gram model.

Meteer does not explicitly teach storing N-gram models as CFGs on a computer readable medium.

Official Notice is taken that it would have been obvious to one of ordinary skill in the art at the time of invention to use both the concept and advantages of storing N-gram models and the second plurality of CFGs of claim 1, on a computer readable medium for future use.

The rest of the limitations of claim 23 are rejected for reasons given in rejecting claim 1, above.

As to claim 3, 6, 24, and 27 Meteer teaches a method comprising of obtaining a plurality of context-free grammars comprising a set of context-free grammars having non-terminal tokens (**Examiner understands 'plurality' to mean more than three context-free grammars. Meteer uses Context-free-grammar, which, by definition, has a left side of non-terminals that has abstract, for example of this on page II-38, left column paragraph 3), and at least one context-free grammar having non-terminal token for a phrase that can be mistaken for one of the desired task dependent semantic or syntactic concepts (Meteer uses grammar (from phrases) that are replaced with non-terminals in which the grammars have a semantic structure, this is for a task dependent set or 'text training set'. Page II-38 left column paragraph 1; page II-37 right column paragraph 2);**

replacing each of the identified word occurrences with corresponding non-terminal tokens (**Meteer uses phrases modeled with phrase structure grammar are replaced with non-terminals, page II-39, paragraph 1 and one way to identifying word occurrences is to figure the probability of expanding non-terminals, page II-38, left column paragraph 2);**

building an N-gram model having the non-terminal tokens (**Meteer uses grammar that is replaced with single non-terminals, tokens are generally used represent non-reduced text element in data to be parsed, which is common in non-terminals. page II-39, paragraph 2); and**

Meteer does parsing the corpus with the plurality of context-free grammars to identify word occurrences for each of the semantic or syntactic concepts and phrases

**(Meteer phrase grammar is used to parse training text, a task dependent text, Fig 1 and page II-37 right column paragraph 2; and phrase grammar in context free form and some context dependence in probabilities of expanding non-terminals page II-38, left column paragraph 4); using task dependent modeling to**

building the N-gram model includes eliminating at least some of the associated

text from the task dependent corpus for non-terminal tokens that can be mistaken for one of the desired task dependent semantic or syntactic concepts and use it in a computer readable medium **(Building an N-gram model includes a task corpus. The examiner interprets the use of N-gram as work probability that uses the mostly likely token sequence in a corpus. Moreover, N-grams have and according to Meteer, N-grams have non-terminals (page II-39 left column paragraph 2);**

obtaining a plurality of context-free grammars comprising

each of the context-free grammars having words present in the corpus to form the semantic or syntactic concepts and use it in a computer readable medium;

**(Meteer uses context-free grammars having words present in a task dependent corpus to form semantic structure. II-37, left column paragraph**

**1)**



but does not teach of doing this with a task independent corpus.

However, Masataki teaches of using a task-Independent task (text or corpus) Model that is defined as "N-grams trained using all data of a training set" and Task-Dependent (text or corpus) Model which is defined as "N-grams trained using the data of a target task only" (**page 785, right column**). He uses a task independent corpus to build a task dependent corpus (**Fig. 1 page 783**).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Masataki's task independent corpus and Meteer's parsing the corpus and obtaining a plurality of context-free grammars for the purpose of building a language model that is more accurate.

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

As to claims 4, 5, 25, and 26, Meteer teaches a method wherein replacing each of the identified word occurrences includes excluding the non-terminals added for the prevention of mistakes during parsing the corpus (**Meteer uses phrases modeled with phrase structure grammar are replaced with non-terminals, page II-39, paragraph 1 and one way to identifying word occurrences is to figure the probability of expanding non-terminals, page II-38, left column paragraph 2**);

storing the N-gram model having the non-terminal tokens (**N-gram**

**integrated by replacing each non-terminal, it is inherit to use a token when using non-terminals to replace a word, examiner understand that these words that are being replaced are stored. Page II-39, paragraph 2) ;**

and the set of context-free grammars having non-terminal tokens representing task dependent semantic or syntactic concepts (**Meteer uses grammar, the non-terminals are represented as semantics. Page II-38 left column paragraph 2).**

Meteer does not teach of representing task independent semantic.

Masataki uses a task independent corpus to build a task dependent corpus (**Fig. 1 page 783).**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to create a language model from a task independent corpus that uses non-terminals that are represented, replaced, and stored for the purpose of creating a unified language model. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success.

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

**As to claim 7- 9, 13, 28-30, and 34** Meteer teaches a method of obtaining a plurality of context-free grammars comprising non-terminal tokens representing semantic or syntactic concepts of the selected application **(Meteer uses subset of rules, such as sub-grammar, and other rules that are not listed subset implies that are other rule besides these. Page II-38, left column, paragraph 3).**

generating word phrases from the plurality of context free grammars **(Meteer uses phrases (which come from words) that are coming from context-free grammar page II-37 right column paragraph 1);**

formulating an information retrieval query from at least one of the word phrases **(Metter uses inputs, the examiner reads the input as a query and the phrases inputs that come from the text, Fig 1 page II-37);**

building a language model using the identified text. **(see Fig 1 page II-37)**

replacing each of the identified word occurrences with corresponding non-terminal tokens **(Meteer uses phrases modeled with phrase structure grammar are replaced with non-terminals, page II-39 left column paragraph 1 and one way to identifying word occurrences is to figure the probability of expanding non-terminals, page II-38, left column paragraph 4); and wherein the word phrases include non-terminal tokens and wherein building the first-mentioned N-gram language model comprises building a**

**N-gram model having the non-terminal tokens, page II-39 left column paragraph 2).**

building the N-gram language model (**Uses language models, such as n-gram models, page II-37 left column paragraph 2**), and comprises building an N-gram language model having the non-terminal tokens (**Meteer uses grammar that is replaced with single non-terminals, tokens are generally used represent non-reduced text element in data to be parsed, which is common in non-terminals. Page II-39, paragraph 2**);

Meteer does not teach of representing task dependent semantic or syntactic concepts on a computer readable medium and does not teach of using a task independent corpus to do queries or identify text.

Masataki teaches of querying based on the query formulated; (**Masaki's query is inputs, which are text data from other tasks, see Fig 1 page 783**).

identifying associated text in based on the query;

**(Masaki bases the input or query on task independent corpus or text from other tasks, see Fig 1 page 783).**

storing the identified text of separate from the task

independent corpus (**Masaki uses a task independent corpus that is separated from , see Fig 1 page 783**).

parsing the corpus the identified text of with the plurality of

context-free grammars to identify word occurrences for each of the semantic or syntactic concepts (**Meteer phrase grammar is used to parse training text, a task dependent text, Fig 1 and page II-37 right column paragraph 2; and phrase grammar in context free form and some context dependence in probabilities of expanding non-terminals page II-38, left column paragraph 4);**

Masataki uses a task independent corpus to build a task dependent corpus (**Fig. 1 page 783**).

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Masataki's queries, identifies, parses and stores task independent corpus and Meteer's parsing the corpus to obtain a language model that is build from Meteer's dependent language model for a more accurate model.

**As to claims 10, 12, 31, 33** Meteer teaches a method wherein

building a language model comprises building an N-gram language model (**Meteer uses an N-gram model for the language model, page II-37 left column paragraph 1**).

building a second N-gram language model from the word phrases generated from the plurality of context free grammars (**Meteer uses Markov chains (N-gram models, more than 1 model) and because there is more than one kind of structure in language to capture, combining the models together results in a “robust statistical grammar” page II-37 right column paragraph 1**); and combining the first-mentioned N-gram language model and the second N-gram language model to form a third N-gram language model (**Meteer uses N-gram models, more than one model, which s used for context free grammar, Fig 1 page II-37**); storing the N-gram model having the non-terminal tokens (**N-gram model uses semantic structure, and examiner understands the semantic structure uses non-terminals, page II-39 left column paragraph 3**) and

But Meteer does not teach of using the plurality of context-free grammars having non-terminal tokens representing task dependent semantic or syntactic concepts on a computer readable medium.

However, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to build, replace and store N-gram and CFGs to provide a

unified language model that increases functionality. One skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success

**As to claim 14, 18, 35, and 39** Meteer teaches a method comprising

obtaining

a plurality of context-free grammars comprising non-terminal tokens representing semantic or syntactic concepts of the selected application **(Meteer uses subset of rules, such as sub-grammar, and other rules that are not listed subset implies that are other rule besides these. Page II-38, left column, paragraph 3).**

generating word phrases from the plurality of context free grammars **(Meteer uses phrases (which come from words) that are coming from context-free grammar page II-37 right column paragraph 1);**

building a first N-gram language model from the word phrases **(Meteer uses phrase grammar for N-gram model Page II-39, left column paragraph 1);**

formulating

an information retrieval query from at least one of the word phrases **(Meteer uses phrases (which includes words) that are inputs to the system, this query is the input of the system, Fig 1 and page II-37 right column paragraph 1);**

replacing

each of the identified word occurrences with corresponding non-terminal tokens; and wherein the word phrases include non-terminal tokens **(Meter uses phrases modeled with phrase structure grammar are replaced with non-terminals, page II-39 left column paragraph 1 and one way to identifying word occurrences is to figure the probability of expanding non-terminals, page II-38, left column paragraph 2)**; and wherein the word phrases include non-terminal tokens and wherein building the first-mentioned N-gram language model comprises building a N-gram model having the non-terminal tokens **(uses sub-networks for phrase structure models that have been independently trained from N-gram model, page II-39 left column paragraph 2)**; and wherein

building

the first-mentioned N-gram language model comprises building N-gram model having the non-terminal tokens **(Meter uses N-gram models, more than one model, which s used for context free grammar, page II-37, Fig 1)**.

Meter does not teach of using task independent corpus, Meter uses a task dependent corpus to do the following:

identifying associated text in based on the query; and

building a second N-gram language model from the identified text; and



combining the first N-gram language model and the second N-gram language model to form a third N-gram language model (**Meteer uses several N-gram models, but not task independent corpus, page II-37 paragraph 1)**

parsing the corpus

with the plurality of context-free grammars

to identify word occurrences for each of the semantic or syntactic (**Meteer phrase grammar is used to parse training text, a task dependent text, Fig 1 and page II-37 right column paragraph 2; and phrase grammar in context free form and some context dependence in probabilities of expanding non-terminals page II-38, left column paragraph 4);**

Masataki teaches of using task independent corpus with a task dependent corpus (**Fig 1 page 783**).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Masataki's task independent corpus and Meteer's dependent corpus that builds, stores, identifies, parses and generates context free grammar to combine N-grams with context-free grammar techniques for a more accurate language model .

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

**As to claims 15 and 36** Meteer teaches a method of building the second N-gram language model includes using only the identified text **(Meteer uses N-gram models that are used to identify text, and also uses more than 1 N-gram model (N-gram models) which uses identified text or training text, see Fig 1)** replacing each of the identified word occurrences with corresponding non-terminal tokens **(Meteer uses non-terminals which the examiner reads as having tokens by definition, and these non-tokens are used for probability/occurrence of phrases which has words, page II-38 left column paragraph 4); and** wherein the word phrases include non-terminal tokens **(The grammar structure includes non-terminals page II-38 left column paragraph 2) and** wherein building the first-mentioned N-gram language model comprises building a N-gram model having the non-terminal tokens **(Meteer teaches of using more than one N-gram, and uses N-grams for the purpose of building a language model, the non-terminals are used, page II-37 paragraph 1 and page II-38 paragraph 2).**

Meteer does not teach of using task independent corpus for parsing the corpus the identified text of with the plurality of context-free grammars to identify word occurrences for each of the semantic or syntactic concepts **(Meteer phrase grammar is used to parse training text, a task dependent text, Fig 1 and page II-37,**

**paragraph 2; and phrase grammar in context free form and some context dependence in probabilities of expanding non-terminals page II-38, left column paragraph 4); or use a computer readable medium.**

Masataki teaches of representing task dependent semantic (**Fig 1 page 783**).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Masataki's task independent corpus and Meteer's dependent corpus that has N-grams with context-free grammar techniques to create a language model for a more accurate model.

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

**Claims 16 and 37** are rejected recites the same or similar limitations as claim 12 above (**storing the identified text of the task independent corpus separate from the task independent corpus**) and so are rejected for the same reasons.

**Claims 11, 17, 32, and 38** are rejected recites the same or similar limitations as claims 3 and 9, rejected above, and so claims 11, 17, 32, and 38 are rejected for the same reasons.

**As to claims 19, 20, 40, and 41** Meteer teaches of obtaining a plurality of context-free grammars comprising non-terminal tokens representing semantic or syntactic concepts of the selected application **(Meteer uses subset of rules, such as sub-grammar, and other rules that are not listed subset implies that are other rule besides these. Page II-38, left column, paragraph 3).**

building a word language model from the corpus **(Meteer is building a language model from text, Fig 1 page II-37); and**

assigning probabilities to words of at least some of the context-free grammars as a function of corresponding probabilities obtained for the same words from the word language model **(Meteer uses probability functions that are from grammars that are from the same words from the language model, page II-39 left column paragraph 1);**

wherein the word language model comprises an N-gram language model **(page II-37 left column paragraph 1).**

Meteer does not teach normalizing probabilities.

Masataki teaches of assigning probabilities includes normalizing the probabilities of the words from the language model in each of the context-free grammars as a function of the words allowed by the corresponding context-free grammar **(Masataki teaches of using a coefficient that normalizes the function,**

**which is from grammar that are words from the language model. page 784, paragraph 1).**

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use Masataki's normalizing probability to Meteer's probability function for more accurate calculations of the probability.

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

**As to claim 21, 22, 42, and 43** Meteer teaches of a method for creating a unified language model for a selected application from a corpus wherein the corpus comprises a task independent corpus.

building a N-gram language model includes using the identified text phrases

**(Meteer uses phrase grammar for N-gram model Page II-39, left column paragraph 1);**

Also, Meteer does not teach of using a task independent corpus.

However, Masataki teaches of using a task independent corpus. Therefore, it would have been obvious to one skilled in the art to use a task independent corpus to build a language model for a more precise language model.

Meteer does not teach of using a computer readable medium, however, the examiner takes Official Notice that it would have been obvious to one of ordinary skill in the art at the time of the invention to use a computer readable medium to enable easy updating.

Meteer does not use querying and identifying based on the query formulated.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use a query that will access the N-gram language model that is from a task independent corpus because this would enable convenient updating of the system.

The claims 21 and 42 recite the same or similar limitations as claim 1, rejected above, and so claims 21 and 42 are rejected for the same reasons. The rest of the limitations of claims 22 and 43 are the same or similar to those of claim 14, rejected above, and thus they are rejected for the same reasons.

Art Unit: 2654

As to claim 23, Claim 1 recites the same or similar limitations as claim 23, rejected above, and so claim 23 is rejected for the same reasons.

***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows:

Kawai et al (5,878,390) Teach statistical language model and grammar rules to a speech recognition system.

Hemphill et al. (4,984,178) Teach CFGs and Unified grammar with CFGs to a speech recognition system.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myriam Pierre whose telephone number is 703-605-1196. The examiner can normally be reached on Monday – Friday from 5:30 a.m. - 2:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on 703-306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

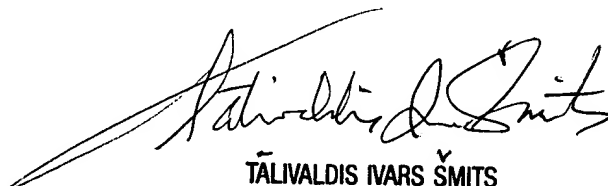


Art Unit: 2654

Information As to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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TĀIVALDIS IVARS ŠMITS  
PRIMARY EXAMINER